



EDS, POTS, Dysmotility, And Autoimmunity In MCAS

Beth O' Hara, FN With
Kelly McCann, MD



Beth O' Hara, FN

Welcome back to this episode of the Reversing Mast Cell Activation Syndrome and Histamine Intolerance Summit. I'm your host, Beth O'Hara, of Mast Cell 360, and I'm really excited today to have with us, Dr. Kelly McCann. And this is going to be a super interesting interview about conditions that are very common that occur with MCAS, and how do we address them? Things like EDS, things like POTS. So if you're dealing with those types of things, I think you're gonna love this interview. And I wanna tell you a little bit about Dr. Kelly. Her passion is for understanding why certain people develop specific conditions. And this drove her beyond conventional medicine to study complementary, alternative, integrative, functional medicine and environmental medicine. And she really specializes today in complex chronic illnesses, Lyme disease, co-infections, environmental toxicants, mold and mycotoxin illness, mast cell activation syndrome. And one of the things I love about her is that she's also pulling in a psychological and spiritual aspects that are related to these chronic illnesses. And she practices at her thriving practice, which is the Spring Center in Costa Mesa, California. She's also on the board of directors for the American Academy of Environmental Medicine and the International Society for Environmentally Acquired Illnesses. Finally, she was the host of the recent Mini Manifestations of Mast Cell Activation Syndrome this summit. And if you didn't check that one out, it's very different than our summit with lots of wonderful information there, too. Thank you so much for joining us, and I'm really delighted to have you.

Kelly McCann, MD

Thank you so much for having me, Beth.



Beth O' Hara, FN

Could you tell us a little bit first, before we dive into the nuts and bolts of what we're gonna talk about, how did you get into this area? It seems like we all, who are specializing in people who are really chronically ill and struggling, there's a personal story to that.

Kelly McCann, MD

Sure, I'm happy to share that story. I knew that I wanted to do holistic medicine and that had been a driver from the very beginning. And so, I did acupuncture and all sorts of these other kinds of modalities to have as many tools as possible. And then after residency, I was living in Oregon and I got really sick, and I didn't understand what it was at the time. Fortunately, I was able to leave Oregon, move to Arizona and recover. But in hindsight, I realized actually that I was mold exposed, developed chronic fatigue, et cetera. And I had had a number of mold hits, as we talked about earlier, over the course of my lifetime, grew up in a moldy basement, things like that. And then it happened again.

So, the chronic fatigue, the food sensitivities, daily hives, bloating, you know, the GI symptoms. And I really felt that it was mast cell activation. And somewhere along that journey, I also found out that in addition to the mold and the mast cell, I also had Lyme and Bartonella that I probably got from my mom or from growing up in upstate New York 'cause that's where it's very prevalent. And many of the things that I've learned for helping my patients is because I had to deal with that, too, sometimes not to the extent as some of the patients, but it really brings a level of compassion and deep understanding as you experience as well. So that's part of the story and I'm really grateful that I was able to go through that and get through to the other side, and be able to share this information with patients.

Beth O' Hara, FN

So grateful that you have, too. And I know we've worked together on some cases, which has been a pleasure.

Kelly McCann, MD

Yes.



Beth O' Hara, FN

And we're gonna dive into what are called pentads. And these are conditions that can coexist with mast cell activation syndrome because we know that the mast cells are at the interface of the nervous system and the rest of the body. There's key cells in so many processes. So it absolutely makes sense that there are going to be involvement in a number of different systems related to mast cells. And this is a phrase that may be new to people, the pentads. But can you talk about just what that means and what these conditions are?

Kelly McCann, MD

Sure, I'm happy to, and I can't take credit for it, this was really coined by my colleague, Andrew Maxwell, who is a pediatric cardiologist and were in a group of practitioners who focus on mast cell activation and related conditions. And he kept noticing that patients who had mast cell activation often had these affiliated conditions, as so, pentad means five. And he found that there were five, and perhaps more, primarily related conditions. And those include Ehlers-Danlos syndrome, hypermobility, POTS, or dysautonomia, so, POTS stands for postural orthostatic tachycardic syndrome, and autoimmune conditions, and then gastroparesis, and I think that gastroparesis and SIBO are kind of hand in hand there, too.

So those are the five and several colleagues have proposed that there are probably a pentad. And usually when you see a picture of this, it's going to show additional related conditions like endometriosis, craniocervical instability, tethered cord, median arcuate ligament syndrome, SIBO, as I mentioned, a variety of other conditions that tend to show up in these patients. And it's a really helpful way for practitioners and patients to understand the overlapping nature of these conditions because patients who have hypermobile connective tissue, when they get into a moldy situation, they're much more likely to have issues and potentially develop mast cell activation, for example, which can then potentiate and exacerbate their hypermobility, leading to other conditions like CCI or MALS.

Beth O' Hara, FN

And that all makes so much sense. And we know that mold toxins, there's research showing that these mycotoxins weaken the connective tissue, Bartonella weakens the connective tissue. I see that quite a bit. Also, I've had EDS myself and I've had great improvements with recovering with those things. So I always like to add the little hope angle for people. I don't know if I'll ever have



normal connective tissue like somebody else does, but I don't have the subluxations that I used to have.

Kelly McCann, MD

Oh, that's great.

Beth O' Hara, FN

Yeah. And I know we see a lot of these and what's so important is that people realize it's all connected, because we end up in all these specialists, you know, we're at the gastroenterologist's, we're at the rheumatologist's, we've got somebody else managing POTS, we've got somebody else managing EDS, but there's a connection underlying all of this. Can you talk more about that?

Kelly McCann, MD

Sure. So we know that mast cells tend to live at the areas of interface. They hang out around the vascular system, they hang around in the nerves. And certainly if there's mast cell activation and degranulation of the mediators and those inflammatory chemicals around the nervous system, that can potentially lead to an autonomic nervous system issue if that's where those mast cells are being stimulated. And then we also know that the mast cells exist all throughout the connective tissue as well. And so when you're dumping those inflammatory mediators, that's gonna enhance and exacerbate the connective tissue problems. And, you know, in terms of the gastroparesis, again, that's a dysautonomia condition. And so that one makes sense. And in terms of autoimmune conditions and root cause, we know that many of the things that drive mast cell activation are mold, mold exposures, mycotoxins, Lyme, Bartonella, in particular. And those things also drive autoimmune conditions. And so it does really make a lot of sense that we're seeing overlap of these conditions in many, many patients.

Beth O' Hara, FN

And this is where this root cause approach that I know you really specialize in, we work in, we've gotta look at what's under the surface that's creating all of this dysregulation? And get at that layer and that level. And that's what you're talking about in terms of the mold, the Bartonella, the Lyme. And then it's about how these show up in different people based on their individuality. But we can trace it back to what's happening underneath, what's happening at this kind of root level. And that's a real road to healing, rather than just keep suppressing symptoms.



Kelly McCann, MD

Absolutely. Now, of course, we know that there's a genetic component with the EDS, the Ehlers-Danlos syndrome. And so we're not saying that you can change your genetics, but the presentations and the manifestations can be improved upon, like you suggested. And there is research in the literature where a person presented with hypermobility, they were found out to have Bartonella, treated the Bartonella, and the hypermobility resolves. And so, there definitely can be improvements in clinical presentation.

Beth O' Hara, FN

So let's dive more deeply into EDS and then POTS and autoimmune, and kind of take these areas.

Kelly McCann, MD

Sure.

Beth O' Hara, FN

So, many people are screened for EDS with a Beighton scale, but I often wonder, "Well, what if those aren't the joints that are as heavily affected?" I know we have to have something, we've gotta start somewhere, but I do wonder how many people are we missing? But I'd love to hear about how you're screening for hypermobility, and then what are some of the ways that you're starting to support people and help people who are dealing with, if we wanna call it hypermobility or EDS, that are on that spectrum?

Kelly McCann, MD

On that spectrum. Sure, I mean, I do start with the Beighton scale because that's validated, it's very helpful. I also think that depending upon the age of the person, it's really important to ask the historical questions, or do a historical Beighton score because what a 60-year-old person can do versus a 20-year-old person is very, very different. And we know that there's a time course that changes with hypermobility where that repeated trauma as a younger person eventually turns into osteoarthritis. And so I don't expect most of the older patients to be able to do all of the hypermobile things that they could do when they were younger. So, in addition to the Beighton score, which I can go through quickly, and I am not hypermobile, so I am not a good illustrator, perhaps Beth, you can illustrate for us, but the thumb pulled down to the forearm.



Beth O' Hara, FN

Yeah.

Kelly McCann, MD

There's Beth.

Beth O' Hara, FN

Now, I've never had that one, but many people can get their thumb to touch the forearm this way. Yeah.

Kelly McCann, MD

Great. And then pinky back more than 90 degrees.

Beth O' Hara, FN

Yeah, so I'm at 90 now, but I used to be able to go back about this far.

Kelly McCann, MD

Wow.

Beth O' Hara, FN

And you'll see a lot of times, I know you see this, people can really pull their fingers back.

Kelly McCann, MD

And so you get one point for each side with that, and then there's the elbow hyper-extended more than 10 degrees. It's just really straightforward.

Beth O' Hara, FN

Yeah, and mine don't hyper-extend anymore, but I used to get... I mean, maybe it's very subtle, but I used to have a lot here, yeah. But the palm has to be up. I just wanted to show people, palm up.

Kelly McCann, MD

And then the knees, so knee hyperextension greater than 10 degrees when you're standing up straight and straightening your knees, yes



Beth O' Hara, FN

And then there's the bending over, palms flat on the floor.

Kelly McCann, MD

Right, with your knees straight. So that is nine points. One point for the bending over, two points each for each side, and the higher the score, so, for somebody over 50, if it's four points out of nine, that is considered positive, for a preteen, it's six out of nine, and then for regular other people, it would probably be five out of nine. So that's one way to screen, and I think it's useful. There's also the Grahame and Hakime five-point score where you ask, "Could you now or could you ever place your hands flat on the floor without bending your knees?" And then asks about the historical thumb, or, if as a child, did you amuse your friends by putting your body into strange shapes or contortions? Or could you do the splits? That's another one. Or did you ever dislocate shoulder, knee, et cetera? Or consider yourself double-jointed? And so sometimes those are useful screening questions as well. And then it's really about the exam. So, you're right, people may have other joints 'cause we don't ask about shoulders really other than dislocation. But some people do have very hypermobile shoulders, hypermobile ankles. And so I think you start the questions, do the quick Beighton assessment, and then if things seem suspicious, you can go a little bit deeper with more historical questions and a physical exam.

Beth O' Hara, FN

And then we know that there are these rarer forms that have really stretchy skin. I'll sometimes just ask people to show me how much they can stretch their skin. And I've only seen this twice where people have had the actual rare, genetic EDSs where their skin is just gonna really stretch a lot, there's visceral involvement. Can you touch on just a little bit of those in comparison with the more common hypermobility forms?

Kelly McCann, MD

Sure. Those forms actually have a known genetic variant so we can test for those. The hypermobile EDS, we do not know the genetics of that, although it seems to be somewhat autosomal dominant in that one parent has it, oftentimes the children do. So, the other forms are, as you mentioned, much, much less common. There's a classical form. There are other forms related to the vascular system and these can all be tested through genetic testing these days. And so when somebody presents with extreme hypermobility, with soft, flexible skin, or some of



the other signs of these other conditions, then that's where we would send people for genetic testing to rule it out.

Beth O' Hara, FN

And then let's talk about options for people before we go to the next condition. I've gotten huge amounts of relief in both strength training with a EDS-aware physical therapist. And that was the game-changer, some are understanding the EDS because normal PT actually made me worse. I've done bracing at periods of time when I didn't have the strength to hold the joints in place. But keeping that strength up has been huge for me. And then there's some supplements that have been helpful and platelet-rich prolotherapy, PRP, has been a game-changer. What are you finding that's really helping people?

Kelly McCann, MD

I agree, the physical therapist, somebody who really understands EDS, I think that that's one of the most important things for people. I do think that just having an awareness of the fragility of the tissue is really important. You know, what happens is a lot of people think it's kind of cool and fun to put their bodies in weird contortions. And unfortunately, that is damaging the tissues and they'll end up with problems later on. So, actually I find a big component of this is really education for patients to understand more about how to protect their bodies, and then informing their families has been profoundly helpful for people to really start to understand how they can protect themselves. There are some people who do prolotherapy, again, you really need to find a practitioner who understands how to use PRP, or prolotherapy, with the connective tissue that's special. Those are probably the biggest things. I have seen some people use braces with different joints as well, or even a stiff collar if they're having craniocervical instability issues.

Beth O' Hara, FN

Yeah, I love that education piece. And that was also huge for me because I had a I-can-do-everything kind of attitude. And I mean, I'm a small person, but I would be carrying 25, 50-pound bags of mulch myself and be in pain, but not realize the damage that I did over and over to my ligaments, and learning to listen to and respect my body, even just carrying a heavy purse. I switched to a lightweight backpack, really helped my neck and my shoulders.

Kelly McCann, MD

Mm, yes.



Beth O' Hara, FN

Now, let's shift gears to POTS. Can you tell us more about the relationship with POTS? How does it present? How are you diagnosing it? How are you treating it?

Kelly McCann, MD

Sure. So, POTS is postural orthostatic tachycardic syndrome, which essentially means when you stand up too fast, your heart rate skyrockets and the patients might feel dizzy, lightheaded, really fatigued. They kind of have exercise intolerance. They could feel nauseated, just not well in general. Oftentimes, they don't like to eat in the morning. They tend to be not feeling well in the morning because they've been lying flat for so long and then standing up makes them not feel well. They tend to feel better lying down. So these are some of the things that I might hear that make me suspicious, that sort of dizzy, lightheaded piece. And then patients also do complain about palpitations, tachycardia. They feel like their heart is pounding.

They may be really anxious as well, not realizing that it's actually a physiological response and it may not be a psychological response. So, very often, it tends to be women, and it tends to be younger women, though that's kind of the classic person, you know, who's a 20-year-old, stands up, feels dizzy, lightheaded, and anxious. Maybe she's not anxious, maybe she has POTS. And one of the first things that we do to identify this is to actually just have people track their heart rate and their blood pressure. So, you can even do this at home with a pulse ox or a blood pressure cuff, if you have one, but the pulse ox is nice because we're really just tracking the heart rate. So I have patients lie down for about 10 minutes to stabilize the heart rate, check the heart rate when they're finally stable after about 10, 15 minutes, and then have them stand up, and then they'll check the heart rate every minute for 10 minutes.

And if the heart rate increases more than 30 beats per minute from standing to... from, sorry, lying to standing, then that meets the criteria. If they're under 20, 21, usually you wanna see it bump up about 40 points. Another related condition that is important to screen for as well is orthostatic hypotension. And so that's when the blood pressure drops when you go from lying to standing. And so if somebody says that they feel poorly, but maybe the heart's pounding, but not necessarily fast, then we should check the blood pressures. And so, again, check the blood pressures after lying down for 10 to 15 minutes and then stand people up. And if they don't feel well, they can lean against a wall, they don't have to stand in the room. But then you're checking the blood pressure every minute. And in order to meet criteria for orthostatic hypotension, now



we're looking at the systolic, or the top number. Then the top number needs to drop more than 10 points, and the bottom number needs to drop more than... I'm sorry, 20 points, and the bottom number needs to drop more than 10 points. So, definition of orthostatic hypotension, systolic blood pressure drops more than 20 and diastolic drops more than 10, and that meets the criteria. Now, there are other forms of dysautonomia that are less common. Those are probably the most common ones. Technically, the gold standard for diagnosis is a tilt table test. I have rarely gotten a cardiologist to prescribe one because basically they strap them in, they flip them upside down, and wait 'til they pass out. And so, the cardiologists tend to think of it as torture. So they don't like to order them. They don't like to do them. And unfortunately, there are a lot of cardiologists out there who won't deal with POTS. They don't seem to want to take that on, unfortunately. But some of the treatments early on are really simple, like making sure you're getting adequate fluid and electrolytes and salt. So, that really means lots and lots of salt to help get the fluid to stay in the vasculature. And so, many patients will take salt tablets because it's really hard to eat that amount of salt that they need. They're looking to have, excuse me, between two and five grams of salt in a day. And then ideally, you're getting in the amount of fluid, say, an ounce for every kilo. So if somebody's 60 kilos, you wanna get like 60 ounces in at least, sometimes a little bit more, especially if you have that salt on board.

Beth O' Hara, FN

And I just wanna highlight, you're saying two to five grams and many people are so afraid of salt, but it's absolutely critical. And two to five grams is a good amount of salt. When I had a young girl, she was 14 when we started, and as soon as she would get out of bed every morning, she would pass out. And all we did was start putting a glass of salt water by her bed, have her drink it, barely salty salt water, have her drink it before she got out of bed, and that... and vitamin C, which they figured out, stopped the passing out first thing in the morning.

Kelly McCann, MD

Yeah, that's great. Other things that people have tried in addition to vitamin C have just been other minerals, selenium, zinc, magnesium, just to really try and hold more fluid in the vascular space, in the blood vessels. And so, those are some of the simple things that people can do and that can be profoundly helpful. There are a couple of medications that can be used for POTS. One of the ones that I've used successfully is called Corlanor. Sometimes it's a little tricky to get without a cardiologist, but it has been very helpful for patients with POTS. It tends to regulate the heart rate a little bit and support the vasculature. Patients, sometimes, will use beta-blockers.



Beta-blockers will slow the heart rate down. Sometimes it drops the blood pressure a little bit. Some people don't like blood pressure... sorry, beta-blockers very much because they can be sedating and people can feel fatigued on them. So they're not my favorite go-to. I've really found that the Corlanor is much better tolerated for POTS. Some patients have to use compression stockings, again, to really try and keep the blood up into the brain, that's what you were trying to do. So if you wear compression hose on your feet and your legs, that will help push the fluid back up into the rest of the brain. So that's really some of the best things for POTS.

Beth O' Hara, FN

And I found getting some exercise, just keeping the movement going to keep the blood flowing. And that's part of the fatigue that people often don't realize when the blood pressure is dropped so much. You're not gonna be thinking straight. You can't get that pressure to get it up there. Those are wonderful tips. I've also seen people, and I experienced myself, getting improvements with oral hydrocortisone for the mineralocorticoid effect-

Kelly McCann, MD

Mm-hmm.

Beth O' Hara, FN

would help with that.

Kelly McCann, MD

Yeah, so that may help a little bit more with the orthostatic hypotension piece.

Beth O' Hara, FN

Mm-hmm.

Kelly McCann, MD

So, and there are more medications that are available for the orthostatic hypotension, like midodrine or the Florinef, the mineralocorticoids, exactly. They don't tend to work as well on the POTS side of things. They're more indicated for the orthostatic hypotension. And again, it's a little tricky to get practitioners who know enough to feel comfortable enough to prescribe these medications. I will say that in my patient population of young, mold, mast cell patients, EDS



patients, I do tend to see far more POTS than orthostatic hypertension. And so we don't have as many medications available to us when we're dealing with the POTS dysautonomias.

Beth O' Hara, FN

So we've been under this category, dysautonomias, which we know have a huge relationship with vagal nerve. And we've got lots of interviews about vagal nerve and improving vagal nerve signaling. And we've got a really fascinating interview about thiamine deficiency that ties in with the dysautonomias. For anybody dealing with this, definitely grab those as well. So we've covered the dysautonomia realm, in terms of POTS. Anything else there you wanna touch on before we move on to autoimmunity?

Kelly McCann, MD

No, I think we can move on.

Beth O' Hara, FN

Okay, so then we've got this autoimmunity connection. Can you talk more about that? Why is that happening with mast cell activation syndrome? Does it mean that you'll develop autoimmunity, but the risk is much higher? And we see a lot more correlation. And what are you doing? What are your go-tos when people are dealing with autoimmunities?

Kelly McCann, MD

So, autoimmune conditions are very, very common when you're dealing with mold and Lyme, and any environmental toxicants. I mean, those are the drivers for autoimmune conditions. And so, even if somebody doesn't have mast cell activation, or EDS or POTS, if they are in a... you know, it could be a family member who doesn't have those things and they have the autoimmune piece. And so, just like when patients come in with mast cell activation, when they come in with autoimmune issues, we're gonna be looking for root causes. My first go-to is cleaning up the diet, no more gluten, usually no more dairy, cows milk dairy, because those foods are so pro-inflammatory that they're gonna exacerbate the autoimmune attack that's already happening. And then I love LDN, actually, that's one of my favorite go-tos for the autoimmune piece. I find that's very, very helpful, and treating the underlying cause. So, if patients have mold, treat the mold. And I've been able to... I've really seen reversal of a positive ANA, reversal of Hashimoto's, reversal of ulcerative colitis, even rheumatoid arthritis with doing



the treatments for the autoimmune condition and the root causes, whether that's mold or chronic infections, or environmental chemicals.

Beth O' Hara, FN

And then the LDN for people who have not heard that before is low-dose naltrexone. And we also have an interview on that if you wanna find out more about it, really gonna dive into the LDN. That's the one with Darin Ingels. All right, so then we've got our last in the pentads and it's this GI motility area. And you talked about before with gastroparesis, with SIBO, let's talk about how that's related, what's happening? And what are your go-tos there?

Kelly McCann, MD

Yeah, that gastroparesis is really tough. I mean, I think it's a more targeted dysautonomia that's happening, and that may be multifactorial. So it could be because the mast cells are impacting the autonomic nervous system in that particular area, it could be vagus nerve related. It could be a variety of it, could be connective tissue related, that the connective tissue doesn't work as well. So there's a variety of different considerations for the cause of gastroparesis. And then treatments are pretty tough. There are some medications out there that have been used over the years. I'm not sure how effective they are. Sometimes they can be helpful. I personally don't tend to use them. Things like Reglan, you know, because they have so many other potential side effects. And I know with mast cell patients, they don't really wanna take a lot of medications unless, really, they have to.

And then when you have a stomach that isn't working properly and the intestines are just sluggish, people are much more at risk for developing small intestinal bacterial overgrowth, and otherwise known as SIBO. And so, SIBO is a condition, I'm not sure if other folks have talked about it much, where there is bacteria in the small intestine where it's not supposed to be. We have a lot of bacteria in our large intestine, our colons, but not in our small intestines. And they set up housekeeping in the small intestine and they tend to have a party, and the bacteria ferment and create gas, which then creates a lot of GI symptoms, nausea, sometimes heartburn-type symptoms if the bacteria tend to be on the upper end of the intestines, or they can present with bloating, gas, flatulence, diarrhea, constipation. So those are some of the presentations that happen with gastroparesis, too, you may get more vomiting or heartburn-type symptoms and things just tend to sit there. Patients can get a malabsorption presentation as well.



Beth O' Hara, FN

And just for people who maybe don't know that term gastroparesis, this is where the stomach's not emptying as quickly. And in all of this, we're talking about in the realm of things not moving through the GI tract at the pace that it should be moving at. I've seen people get really good benefits with different vagal modalities, whether it's looking at osteopathic cranial work, making sure there's not pressure on those nerves, frequency-specific microcurrent. What's working in your practice?

Kelly McCann, MD

Good question. I do have patients do osteopathic manipulation. There are some physical therapists that have been trained in visceral manipulation, I think that that's helpful, too. And yeah, anything that's gonna help stimulate the vagus nerve, whether that's humming or singing, or gargling or any of the devices. I like the Rezzimax a lot. I think that can be very helpful at supporting vagal tone for patients.

Beth O' Hara, FN

Can you talk about that one? We haven't talked about that on the summit.

Kelly McCann, MD

Sure, so, I can go get one or I can go get it if you want.

Beth O' Hara, FN

Sure, let's see it. I love show and tell.

Kelly McCann, MD

So, here is the Rezzimax. It allows for vibration and has a variety of different speeds. You can place it on your head if you're having a headache, you can place it on your abdomen. The whole device vibrates. And then you can use this as a target. And there's a wide variety of different ways to use it. The man who developed it is a physical therapist and he's delightful. He loves to talk to patients about how to use it. And so, has a great way of explaining a variety of different ways to use it. I had a patient who has MS, and he was having some challenges evacuating his bladder, just would have bladder retention. And, you know, that could be very painful. Using the Rezzimax for 15 minutes on the lower abdomen, no problems. So it was really profound to use that for him. I've used it for back pain just to try and calm that down. So, I think it can be very effective for a



variety of different things. I had one patient with EDS and POTS and mast cell, and a lot of gastrointestinal issues, and she started using it just on her feet, and that really brought a lot of relief. So, wide variety of ways to use it. And there is a money-back guarantee, which is always nice.

Beth O' Hara, FN

Well, and that makes so much sense because everything's driven by the nervous system and we can get locked into these nervous system patterns. So if we can just wake things up, if we can shift the pattern from a pattern that's not serving us anymore, then it opens the doorway to these new signaling patterns or going back into balance with those patterns. So anyway, that's where my brain's going with it right now.

Kelly McCann, MD

Yeah, so it's one of many different tools out there, but one that I have enjoyed a lot.

Beth O' Hara, FN

So then the last in the pentads is mast cell activation syndrome. So we've talked about it a lot, but we need as many approaches that are working for people as possible. We've talked about a lot in the summit, but I wanna hear what are some of your starter or your go-to places for people that's working in your practice with mast cell activation syndrome?

Kelly McCann, MD

Well, why don't I focus a little bit more on medications? As an MD, you know, I'm able to use more medications. And so, I do tend to start with over-the-counters, your H1 blockers, so your second-generation H1 blockers, that's gonna be Zyrtec, Claritin, Allegra, Xyval. I'll use some muscle testing if patients are open to that. If not, they have to kind of walk through and figure out which one works best. H2 blockers, I really think we only have Pepcid available at this point, unless you're elsewhere in the world, in which case, maybe you have some more H2 blockers available. I recently ordered some Rupatadine from a Canadian pharmacy. So Rupatadine is an H1 blocker that has platelet-activating factor inhibitors. And so, it's more unique as a prescription. Dr. Theoharides has literature about that, where it can be helpful for chronic urticaria, mast cell activation. The typical doses for Rupatadine are... it's a 10-milligram tablet, and you can take up to three to four a day. So that's kind of neat as another alternative if you can get your prescriber to write for a Canadian pharmacy, you can get that. I use a lot of cromolyn, and I'm sure other



practitioners have talked about cromolyn. I find that some people tolerate the commercial cromolyn and many people don't. The commercial cromolyn is liquid in a little plastic tube. And even though it's just water and cromolyn, sometimes plastic really bothers mast cell patients. And so they would need to have it compounded. And the doses with the cromolyn are about 100 to 200 milligrams up to four times a day. And again, can be a game-changer for people, doesn't work at all for others. And some people find that they have to start with really low doses. I know your listeners are very good at teeny-tiny doses, but that's what works.

Beth O' Hara, FN

Yeah, starting with just a drop 'cause there can be also an autonomic nervous system response to that cromolyn. Tania Dempsey, in her interview, has some great info about starting with a little drop of cromolyn and building up slowly to just ease into that.

Kelly McCann, MD

Yes, I find that that's a really important way to do it, too. I like ketotifen. Ketotifen is a mast cell stabilizing medication that's only available commercially as an eye drop, which I haven't really used very much, but it is available compounded. And actually I love ketotifen. Some patients do fantastic with it. I tend to start small doses, usually 0.5 milligrams twice a day. And with our ultrasensitive patients, then we're opening capsules and taking just pinches of that. And you can work up to three times a day, some patients. I have one woman who slowly worked her way up and now she's at three milligrams three times a day, and that's just golden for her. She does really well with that dose. You can go a little higher if you want, and it just gets compounded as higher and higher doses. But usually that 0.5 is a good place to start.

Let's see, what are some other things that we use? There are other medications that can be used. Hydroxyurea is one of them. For example, if somebody has mast cell and has a lot of bone pain or they happen to have elevated platelets. So, the hydroxyurea can be really helpful in a certain set of patients. Dr. Afrin wrote an article about that. It's a medication that is often used for a sickle cell anemia. A little bit tough to take, but works for the right patient. Let's see. There are other medications like an IgE blocker called Xolair. So if patients have mast cell activation have very high IgE levels, Xolair can be used and can be quite helpful in that super allergic mast cell patient. That usually requires an allergist on board to help get that and to hone in the dose.



Beth O' Hara, FN

So this has been amazing information. Anything that you wanted to touch on we haven't gotten to yet?

Kelly McCann, MD

Other medications that I've used that have been successful are the leukotriene inhibitors. Singular is one that I've used and there are a couple other that are less commonly used. They can be very helpful. And I do find that for some patients, they need much higher doses than the usual, you know, 10 milligrams a day. So some people are on 20 milligrams twice a day. And I do find it's important that if a class of medications tends to work for people, it's worthwhile trying some of the other medications in the class because one may work even better than another. Additionally, there are some tyrosine kinase inhibitors. Imatinib is one that Dr. Afrin has used, and a number of my other colleagues have used as well. I will admit, I haven't really used it very much. I haven't felt that I needed to. But certainly there are some patients that do well with imatinib, and it is not a cancer drug per se. And we're certainly using much lower doses than are typically used for systemic mastocytosis. In terms of compounding, did you have people talk about compounding medications much on the summit?

Beth O' Hara, FN

A little bit, but go ahead and dive into it.

Kelly McCann, MD

So, I find that with some of my exquisitely sensitive patients, they really need compounded versions of just about everything. And so it's critically important to find a compounding pharmacist who understands the needs of a mast cell patient, understands that they often need certain kinds of inactive ingredients that are better tolerated. So, sucrose can work for some people, micro-cellulose can work for other people. But being able to have that conversation with the compounding pharmacist is key. I've compounded loratadine, which is Claritin, Zyrtec, which is cetirizine, levocetirizine. And those have worked phenomenally well for those patients who really need that super clean version of the medication. One thing that I like to share with my patients is that there's a great resource online that lists all the inactive ingredients called NIH DailyMed. And so you can just Google NIH DailyMed, look up your medication. There's even a National Drug Code that's listed on every medication, so you can see exactly what is in the preparation that you have. And so, if patients are having reactions to medications, it may actually



not be the medication. It may be the inactive ingredients, and then they can cross-reference the formulations that they're having problems with and figure out what are the inactive ingredients that they're reacting to. So I think that that can be very empowering when you have this long list of medication allergies that are not true allergies, that are mast cell reactions to inactive ingredients. And just a few more words about compounding, compounding pharmacists can also combine medications too, which helps with the costs as well once you figure out what you need. And a few more words about meds, don't forget symptomatic relief. So, benzodiazepines can be mast cell stabilizing, and I have been able to compound some benzodiazepines for certain patients if necessary. And some people do well with aspirin, some people do well with low dose naltrexone. And that cannot only treat the autoimmune components of it, but it can actually stabilize the mast cells. So, there's a lot of options out there in addition to all the supplements. And I think probably the most important thing that I want to share is that there are practitioners out there that can help. And it's really important to have hope to be your own advocate to continue to find the practitioners that will help you on your journey, and then know you've got a lot of work to do. And this is not an easy thing, but you can get better.

Beth O' Hara, FN

Yes, and I know you see it every day in your practice, we see amazing turnarounds. We're both walking cases of these turnarounds. And we are gonna link to... that's a great resource for people on the NIH DailyMed. We're gonna link to that on our summit resources page, so people can find that at mastcell360.com/summit, and I'll also include a list of the most common mast cell triggering excipients, those inactive ingredients that people are really sensitive, sometimes have to watch for in there. Thank you for just this incredible amount of generous sharing your wisdom and your knowledge here. I've always enjoyed our collaborations together. And I just wanna tell you how much I appreciate the work that you do in the world.

Kelly McCann, MD

Thank you, Beth. This has been fantastic. I'm so happy that we collaborate and that you're putting this information out there for the world.